PROGRAM:	**Transportation Technologies**
PROGRAM CIP CODE:	**47.0600**

DESCRIPTION: The **Transportation Technologies** program is designed to prepare individuals for jobs as technicians in the automotive or aerospace fields. The program is comprised of a core curriculum and five options: Option A (Automotive Technology), Option B (Auto body/Collision Repair), Option C (Diesel Engine Repair), and Option D (Aircraft Mechanics), Option E (GST General Service Technician). The occupational standards for options A, B and C are aligned with National Automotive Technicians Education Foundation (NATEF) and Automotive Service Excellence (ASE) standards.

- **Automotive Technologies** includes units on repairing brake systems, repairing electrical/electronics systems, repairing steering and suspension systems, and engine performance diagnosis and repair.

- **Automotive Collision Repair** includes units on performing disassembly and assembly repairs, performing non-structural repairs, performing metal, plastic and fiberglass repairs, preparing and finishing surfaces, and using appropriate paint and refinishing techniques.

- **Diesel Engine Repair** Technology includes units on repair, service, and maintenance of diesel engines in vehicles such as automobiles, buses, trucks and construction equipment; as well as stationary diesel engines in electrical generators and related equipment.

- **Aircraft Mechanics** prepares students to apply technical knowledge and skills to repair, service, and maintain all types of aircraft power plants and related systems. Instruction includes engine inspection and maintenance, lubrication and cooling, electrical and ignition systems, carburetion, fuels and fuel systems.

- **General Service Technician** prepares students to apply skills and technical knowledge to maintain, diagnose and repair automobiles and light trucks.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

47.0600.10 **Transportation Technologies Core Curriculum:** This program prepares the student to apply technical knowledge and skills in the safety, adjustment, maintenance, part replacement, and use of tools, equipment and machines. The course includes developing career plans, preparing for employment, participating in work-based learning experiences, demonstrating oral and written communication skills, understanding financial operations of small businesses, identifying characteristics of successful leaders in the work place and participation in leadership development activities.

-and-

At least one option must be included as part of the instructional sequence for this program:

Option A

47.0600.20 **Automotive Technologies I:** This course prepares the individual to apply technical knowledge and skills in safety, adjustment, maintenance, and parts replacement to repair automobiles and light trucks. Students are introduced to: a) brake systems; b) electric/electronic systems; c) steering and suspension systems; and d) engine performance diagnosis and repair.

-and-

47.0600.25 **Automotive Technologies II:** This course prepares the individual to apply higher levels of technical knowledge and skills to maintain, diagnose and repair automobiles and light trucks. Students will gain in-depth knowledge needed to troubleshoot and identify malfunctioning components and sensors; and correct these problems in four areas: 1) brake systems; 2) electrical/electronic systems; 3) steering and suspension systems; and 4) engine performance analysis. Graduates should be able to pass the ASE tests for each of the four areas**.**

-or-

<u>Option B</u>

47.0600.30   **Automotive Collision Repair I:** This course prepares individuals to apply basic technical knowledge and skills in seven standards areas: 1) safety and maintenance; 2) damage analysis and preparing repair cost estimates; 3) disassemble and assemble parts, 4) non-structural repair; 5) metal, plastic and fiberglass repairs; 6) prepare and finish surfaces; and 7) paint and refinishing techniques.

       -and-

47.0600.35   **Automotive Collision Repair II:** This course prepares the individual to apply higher levels of technical knowledge and skills to repair, reconstruct and finish automobile and light truck bodies, fenders and external features. Includes instruction in seven competency areas: 1) safety and maintenance; 2) damage analysis and damage reports; 3) disassemble and assemble parts; 4) non-structural repairs; 5) metal, plastic and fiberglass repairs; 6) prepare and finish surfaces; and 7) paint and refinishing techniques.

       -or-

<u>Option C</u>

47.0600.40   **Diesel Engine Repair I:** This course prepares the individuals to apply technical knowledge and skills to repair service and maintain diesel engines and related equipment.

       -and-

47.0600.45   **Diesel Engine Repair II:** This course prepares the individual to apply higher levels of technical knowledge and skills to repair vehicles such as buses, trucks, ships, railroad locomotives construction equipment and related equipment.

       -or-

<u>Option D</u>

47.0600.50   **Aircraft Mechanics I:**   This course provides beginning level knowledge and skills that have been identified as preparation for the FAA Airframe and Power Plant (A&P) certificate. Further education and training may be required to be able to master the knowledge and skills required for full A&P certification.

-and-

47.0600.55   **Aircraft Mechanics II:**   This course provides an advancing level of knowledge and skills that have been identified as preparation for the FAA Airframe and Power Plant (A&P) Certificate. Further education and training may be required to be able to master the knowledge and skills required for full A&P certification.

-or-

<u>Option E</u>

47.0600.60   **General Service Technician I:** This course prepares the individual to apply basic technical knowledge and skills in safety, adjustment, maintenance, and parts replacement to repair automobiles and light trucks. Students are introduced to: auto shop and personal safety, tools and equipment, basic vehicle service, engine repair, automatic transmission, and manual drive train and axles.

-and-

47.0600.65   **General Service Technician II:** This course prepares the individual to apply higher levels of technical knowledge and skills to maintain, diagnose and repair automobiles and light trucks. Students will gain in-depth knowledge needed to troubleshoot and identify malfunctioning components and sensors; and correct these problems in the areas of: suspension and steering, brakes, electrical/electronic systems, heating and air conditioning, and engine performance.

And program may elect to add:

47.0600.75 **Transportation Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Transportation Technologies knowledge and skills.

-or-

47.0600.80 **Transportation Technologies - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences related to the standards identified for the Transportation Technologies program**.**

TEACHER CERTIFICATION REQUIREMENTS FOR THE TRANSPORTATION TECHNOLOGIES PROGRAM	
CAREER PREPARATION: The instructor must be vocationally certified according to the following table	
Transportation Technologies	CERTIFICATES
	Types: PCTI, SCTI

Note:
- **Transportation Technologies, 47.0600.70** may be a part of the sequence and the teacher must hold a Cooperative Education Endorsement (CEN).
- Teacher/Coordinator **47.0600.75** is not required to have a Cooperative Education Endorsement (CEN).
- Teacher/Coordinator **47.0600.80** is required to have a Cooperative Education Endorsement (CEN).

CERTIFICATE ABBREVIATIONS FOR THE TRANSPORTATION TECHNOLOGIES PROGRAM	
Certificate Types	
PCTI	Provisional Career and Technical Education Industrial Technology
SCTI	Standard Career and Technical Education Industrial Technology